

FILE 'USPAT' ENTERED AT 13:49:05 ON 03 FEB 1998

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\* WELCOME TO THE \*  
\* U.S. PATENT TEXT FILE \*  
\*\*\*\*\*

=> s transferrin?(5a)receptor?  
126255 TRANSFERRIN?

30355 RECEPTOR?  
L1 517 TRANSFERRIN?(5A)RECEPTOR?

=> s l1 and neisseria?  
1439 NEISSERIA?  
L2 12 L1 AND NEISSERIA?

=> d 1-12

1. 5,708,149, Jan. 13, 1998, Method for producing purified recombinant Haemophilus influenzae transferrin binding proteins; Sheena Loosmore, et al., 530/418, 412, 413 :IMAGE AVAILABLE:

2. 5,698,438, Dec. 16, 1997, Bacterial hemoglobin receptor gene; Igor Stojiljkovic, et al., 435/252.3, 320.1; 536/23.7 :IMAGE AVAILABLE:

3. 5,693,463, Dec. 2, 1997, Method of ordering sequence binding preferences of a DNA-binding molecule; Cynthia A. Edwards, et al., 435/6, 7.23; 536/23.1; 935/76, 77 :IMAGE AVAILABLE:

4. 5,681,570, Oct. 28, 1997, Immunogenic conjugate molecules; Yan-ping Yang, et al., 424/197.11, 203.1, 234.1, 244.1, 256.1; 514/54; 536/123.1 :IMAGE AVAILABLE:

5. 5,618,541, Apr. 8, 1997, Vaccine against \*\*Neisseria\*\* meningitidis infections; Marie-Jose Quentin-Millet, 424/250.1, 249.1; 435/871 :IMAGE AVAILABLE:

6. 5,618,540, Apr. 8, 1997, Subunit vaccine against \*\*Neisseria\*\* meningitidis infections and corresponding subunits in the purified state; Marie J. Quentin-Millet, et al., 424/250.1, 249.1; 435/871 :IMAGE AVAILABLE:

7. 5,589,463, Dec. 31, 1996, Oral delivery of biologically active substances bound to vitamin B12; Gregory J. Russell-Jones, et al., 514/21; 424/194.1; 514/12, 52; 530/405; 536/26.4, 26.41, 26.44 :IMAGE AVAILABLE:

8. 5,578,444, Nov. 26, 1996, Sequence-directed DNA-binding molecules compositions and methods; Cynthia A. Edwards, et al., 435/6, 7.23; 536/23.1; 935/76, 77 :IMAGE AVAILABLE:

9. 5,428,023, Jun. 27, 1995, Oral delivery of biologically active substances bound to vitamin B12 or analogues thereof; Gregory J. Russell-Jones, et al., 514/21; 424/85.4, 193.1, 194.1; 514/2, 4, 6, 12, 15, 52; 530/303, 306, 313, 345, 351, 398, 399, 405, 409; 536/26.4, 26.41, 26.44 :IMAGE AVAILABLE:

10. 5,292,869, Mar. 8, 1994, Method for isolating and purifying \*\*transferrin\*\* and lactoferrin \*\*receptor\*\* proteins from bacteria and the preparation of vaccines containing the same; Anthony B. Schryvers, 530/413; 424/234.1, 249.1, 250.1, 255.1, 256.1; 530/350, 380, 394, 395, 400, 412, 417 :IMAGE AVAILABLE:

11. 5,141,743, Aug. 25, 1992, Method for isolating and purifying \*\*transferrin\*\* and lactoferrin \*\*receptor\*\* proteins and vaccines containing the same; Anthony B. Schryvers, 424/234.1, 249.1, 250.1, 255.1, 256.1, 278.1; 530/350, 395, 400, 413 :IMAGE AVAILABLE:

12. 4,943,522, Jul. 24, 1990, Lateral flow, non-bibulous membrane assay protocols; Robert W. Eisinger, et al., 435/7.25; 422/55, 56, 57, 58, 101; 435/5, 7.21, 7.23, 7.32, 805, 810; 436/512, 514, 518, 520, 523, 531, 535, 807, 808, 810; D24/223 :IMAGE AVAILABLE:

=> d 1-12 date

L2: 1 of 12

TITLE: Method for producing purified recombinant Haemophilus influenzae transferrin binding proteins  
US PAT NO: 5,708,149 DATE ISSUED: Jan. 13, 1998  
:IMAGE AVAILABLE:  
APPL-NO: 08/487,890 DATE FILED: Jun. 7, 1995  
REL-US-DATA: Continuation of Ser. No. 337,483, Nov. 8, 1994, which is a continuation-in-part of Ser. No. 175,116, Dec. 29, 1993, abandoned, which is a continuation-in-part of Ser. No. 148,968, Nov. 8, 1993, abandoned.

L2: 2 of 12

TITLE: Bacterial hemoglobin receptor gene  
US PAT NO: 5,698,438 DATE ISSUED: Dec. 16, 1997  
:IMAGE AVAILABLE:  
APPL-NO: 08/326,670 DATE FILED: Oct. 18, 1994

L2: 3 of 12

TITLE: Method of ordering sequence binding preferences of a DNA-binding molecule  
US PAT NO: 5,693,463 DATE ISSUED: Dec. 2, 1997  
:IMAGE AVAILABLE: DISCL-DATE: Apr. 26, 2011  
APPL-NO: 07/996,783 DATE FILED: Dec. 23, 1992  
REL-US-DATA: Continuation-in-part of Ser. No. 723,618, Jun. 27, 1991, abandoned.

L2: 4 of 12

TITLE: Immunogenic conjugate molecules  
US PAT NO: 5,681,570 DATE ISSUED: Oct. 28, 1997  
:IMAGE AVAILABLE:  
APPL-NO: 08/371,965 DATE FILED: Jan. 12, 1995

L2: 5 of 12

TITLE: Vaccine against \*\*Neisseria\*\* meningitidis infections  
US PAT NO: 5,618,541 DATE ISSUED: Apr. 8, 1997  
:IMAGE AVAILABLE:  
APPL-NO: 08/066,167 DATE FILED: Jun. 2, 1993  
FRN-PR. NO: 91 12177 FRN FILED: Oct. 3, 1991

FRN-PR CO: France  
PCT-NO: PCT/FR92/00905 PCT-FILED: Sep. 29,  
1992

371-DATE: Jun. 2, 1993

102(E)-DATE: Jun. 2, 1993

PCT-PUB-NO: WO93/06861 PCT-PUB-DATE: Apr.  
15, 1993

L2: 6 of 12

TITLE: Subunit vaccine against **Neisseria** meningitidis  
infections and corresponding subunits in the purified  
state

US PAT NO: 5,618,540 DATE ISSUED: Apr. 8, 1997

:IMAGE AVAILABLE:

APPL-NO: 08/064,174 DATE FILED: May 25, 1993

FRN-PR NO: 91 12176 FRN FILED: Oct. 3, 1991

FRN-PR CO: France

PCT-NO: PCT/FR92/00904 PCT-FILED: Sep. 29,  
1992

371-DATE: May 25, 1993

102(E)-DATE: May 25, 1993

PCT-PUB-NO: WO93/07172 PCT-PUB-DATE: Apr.  
15, 1993

L2: 7 of 12

TITLE: Oral delivery of biologically active substances bound to  
vitamin B12

US PAT NO: 5,589,463 DATE ISSUED: Dec. 31,  
1996

:IMAGE AVAILABLE:

APPL-NO: 08/479,635 DATE FILED: Jun. 7, 1995

FRN-PR NO: PH2838 FRN FILED: Oct. 10, 1985

FRN-PR CO: Australia

REL-US-DATA: Division of Ser. No. 61,343, May 17, 1993, Pat.  
No.

5,428,023, which is a continuation of Ser. No. 759,697,  
Sep. 9, 1991, abandoned, which is a continuation of Ser.  
No. 600,137, Oct. 19, 1990, abandoned, which is a  
continuation of Ser. No. 84,821, Jun. 9, 1987,  
abandoned.

L2: 8 of 12

TITLE: Sequence-directed DNA-binding molecules  
compositions and  
methods

US PAT NO: 5,578,444 DATE ISSUED: Nov. 26,  
1996

:IMAGE AVAILABLE:

APPL-NO: 08/171,389 DATE FILED: Dec. 20, 1993

REL-US-DATA: Continuation-in-part of Ser. No. 123,936, Sep.  
17, 1993,

which is a continuation-in-part of Ser. No. 996,783,  
Dec. 23, 1992, which is a continuation-in-part of Ser.  
No. 723,618, Jun. 27, 1991, abandoned.

L2: 9 of 12

TITLE: Oral delivery of biologically active substances bound to  
vitamin B12 or analogues thereof

US PAT NO: 5,428,023 DATE ISSUED: Jun. 27,  
1995

:IMAGE AVAILABLE:

APPL-NO: 08/061,343 DATE FILED: May 17, 1993

FRN-PR NO: PH2838 FRN FILED: Oct. 10, 1985

FRN-PR CO: Australia

PCT-NO: PCT/AU86/00299 PCT-FILED: Oct. 10,  
1986

371-DATE: Jun. 9, 1987

102(E)-DATE: Jun. 9, 1987

PCT-PUB-NO: WO87/02351 PCT-PUB-DATE: Apr.  
23, 1987

REL-US-DATA: Continuation of Ser. No. 759,697, Sep. 9, 1991,  
abandoned,

which is a continuation of Ser. No. 600,137, Oct. 19,  
1990, abandoned, which is a continuation of Ser. No.  
84,821, Jun. 9, 1987, abandoned.

L2: 10 of 12

TITLE: Method for isolating and purifying **transferrin** and  
lactoferrin **receptor** proteins from bacteria and the  
preparation of vaccines containing the same

US PAT NO: 5,292,869 DATE ISSUED: Mar. 8, 1994

:IMAGE AVAILABLE:

APPL-NO: 07/507,481 DATE FILED: Apr. 11, 1990

REL-US-DATA: Continuation-in-part of Ser. No. 344,356, Apr.  
27, 1989,  
abandoned.

L2: 11 of 12

TITLE: Method for isolating and purifying **transferrin** and  
lactoferrin **receptor** proteins and vaccines  
containing the same

US PAT NO: 5,141,743 DATE ISSUED: Aug. 25,  
1992

:IMAGE AVAILABLE:

APPL-NO: 07/639,365 DATE FILED: Jan. 10, 1991

REL-US-DATA: Continuation of Ser. No. 344,356, Apr. 27, 1989,  
abandoned.

L2: 12 of 12

TITLE: Lateral flow, non-bibulous membrane assay protocols

US PAT NO: 4,943,522 DATE ISSUED: Jul. 24, 1990

:IMAGE AVAILABLE:

APPL-NO: 07/230,642 DATE FILED: Aug. 10, 1988

REL-US-DATA: Continuation-in-part of Ser. No. 57,273, Jun. 1,  
1987,

abandoned, and a continuation-in-part of Ser. No.  
57,271, Jun. 1, 1987, abandoned.

=> d 5 ab

US PAT NO: 5,618,541 :IMAGE AVAILABLE: L2: 5 of  
12

ABSTRACT:

A vaccinal pharmaceutical composition which comprises, as  
therapeutic  
agents, at least a first and a second molecule capable of binding to  
human transferrin; the said first molecule originating from a first  
strain of *N. meningitidis* which possesses a human **transferrin** **receptor** in which the lower molecular weight subunit (Tbp2) is  
recognised by an antiserum to the receptor of *N. meningitidis* strain  
2394  
(receptor 2394) and is not recognised by an antiserum to the receptor  
of  
*N. meningitidis* strain 2169 (receptor 2169); and at least a second  
molecule originating from a second strain of *N. meningitidis* which  
possesses a human **transferrin** **receptor** in which the lower  
molecular weight subunit (Tbp2) is recognised by an anti-receptor  
2169  
antiserum and is not recognised by an anti-receptor 2394 antiserum.

=> d 6 ab

US PAT NO: 5,618,540 :IMAGE AVAILABLE: L2: 6 of  
12

ABSTRACT:

The present invention relates to the lower molecular weight subunit  
of

the human **\*\*transferrin\*\* \*\*receptor\*\*** of a strain of *N. meningitidis*, in purified form, as well as to a vaccinal pharmaceutical composition intended for the prevention or attenuation of the effects of an *N. meningitidis* infection, containing the said subunit in purified form.

=> d 5 clms

US PAT NO: 5,618,541 :IMAGE AVAILABLE: L2: 5 of 12

CLAIMS:

CLMS(1)

I claim:

1. A vaccinal pharmaceutical composition intended for preventing a **\*\*Neisseria\*\* meningitidis** infection, which comprises, as therapeutic agents, at least a first and a second molecule capable of binding to human transferrin which are either a human **\*\*transferrin\*\* \*\*receptor\*\*** of *N. meningitidis* or a subunit thereof; the said first molecule originating from a first strain of *N. meningitidis* which possesses a human **\*\*transferrin\*\* \*\*receptor\*\*** comprising a high molecular weight subunit and a lower molecular weight subunit, and in which the lower molecular weight subunit is recognised by an antiserum to the receptor of *N. meningitidis* strain 2394 (receptor 2394) and is not recognised by an antiserum to the receptor of *N. meningitidis* strain 2169 (receptor 2169); and the said second molecule originating from a second strain of *N. meningitidis* which possesses a human **\*\*transferrin\*\* \*\*receptor\*\*** comprising a high molecular weight subunit and a lower molecular weight subunit, and in which the lower molecular weight subunit is recognised by an anti-receptor 2169 antiserum and is not recognised by an anti-receptor 2394 antiserum.

CLMS(2)

2. A vaccinal pharmaceutical composition according to claim 1, which comprises, as therapeutic agents, at least a first and a second molecule capable of binding human transferrin; the said first molecule originating from a first strain of *N. meningitidis* which possesses a human **\*\*transferrin\*\* \*\*receptor\*\*** in which the high molecular subunit weight and the lower molecular weight subunit are recognised by an anti-receptor 2394 antiserum; and the said second molecule originating from a second strain of *N. meningitidis* which possesses a human **\*\*transferrin\*\* \*\*receptor\*\*** in which the high molecular weight subunit and the lower molecular weight subunit are recognised by an anti-receptor 2169 antiserum.

CLMS(3)

3. A vaccinal pharmaceutical composition according to claims 1 or 2, which comprises, as therapeutic agents, at least a first and a second

molecule capable of binding to human transferrin; the said first molecule originating from a first strain of *N. meningitidis* which possesses a human **\*\*transferrin\*\* \*\*receptor\*\*** comprising a subunit of high molecular weight of 100 kD approximately to 90 kD and a subunit of lower molecular weight of 75 kD to 60 kD; and the said second molecule originating from a second strain of *N. meningitidis* which possesses a human **\*\*transferrin\*\* \*\*receptor\*\*** comprising of a subunit of high molecular weight of 100 kD approximately to 90 kD and a subunit of lower molecular weight of 90 kD to 80 kD.

CLMS(4)

4. A vaccinal pharmaceutical composition according to claim 3, in which the said first molecule originates from a first strain of *N. meningitidis* which possesses a human **\*\*transferrin\*\* \*\*receptor\*\*** comprising a subunit of high molecular weight of 93-95 kD approximately and a subunit of lower molecular weight of 72 kD to 65 kD.

CLMS(5)

5. A vaccinal pharmaceutical composition according to claim 4, in which the said first molecule originates from a first strain of *N. meningitidis* which possesses a human **\*\*transferrin\*\* \*\*receptor\*\*** comprising a subunit of high molecular weight of 93 kD approximately and a subunit of lower molecular weight of 67-70 kD approximately.

CLMS(6)

6. A vaccinal pharmaceutical composition according to claim 5, in which the said second molecule originates from a second strain of *N. meningitidis* which possesses a human **\*\*transferrin\*\* \*\*receptor\*\*** comprising a subunit of high molecular weight of 100 kD approximately to 95 kD and a subunit of lower molecular weight of 87 kD to 85 kD.

CLMS(7)

7. A vaccinal pharmaceutical composition according to claim 6, in which the said second molecule originates from a second strain of *N. meningitidis* which possesses a human **\*\*transferrin\*\* \*\*receptor\*\*** comprising a subunit of high molecular weight of 98 kD approximately and a subunit of lower molecular weight of 87 kD approximately.

CLMS(8)

8. A vaccinal pharmaceutical composition according to claim 1, in which the said first and second molecules originate respectively from a first and second strain of *N. meningitidis* serogroup B.

CLMS(9)

9. A vaccinal pharmaceutical composition for preventing a **\*\*Neisseria\*\***

meningitidis infection, which comprises therapeutic agents comprising a first and a second molecule capable of binding to human transferrin which are either a human **\*\*transferrin\*\*** **\*\*receptor\*\*** of N. meningitidis or a subunit thereof; said first molecule originating from a first strain of N. meningitidis which possesses a human **\*\*transferrin\*\*** **\*\*receptor\*\*** comprising a high molecular weight subunit and a lower molecular weight subunit, and in which the lower molecular weight subunit is recognized by an antiserum to the receptor of N. meningitidis strain 2394 and is not recognized by an antiserum to the receptor of N. meningitidis strain 2169, and said second molecule, originating from a second strain of N. meningitidis which possesses a human **\*\*transferrin\*\*** **\*\*receptor\*\*** comprising a high molecular weight subunit and a lower molecular weight subunit, and in which the lower molecular weight subunit is recognized by an antiserum to the receptor of N. meningitidis strain 2169 and is not recognized by an antiserum to the receptor of N. meningitidis strain 2394.

=> d 6 clms

US PAT NO: 5,618,540 :IMAGE AVAILABLE: L2: 6 of 12

#### CLAIMS:

#### CLMS(1)

We claim:

1. The lower molecular weight subunit of the human **\*\*transferrin\*\*** **\*\*receptor\*\*** of a strain of N. meningitidis, in substantially purified form and in the absence of the higher molecular weight subunit of said receptor.

#### CLMS(2)

2. The lower molecular weight subunit of the human **\*\*transferrin\*\*** **\*\*receptor\*\*** of a strain of N. meningitidis serogroup B, in substantially purified form and in the absence of the higher molecular weight subunit of said receptor.

#### CLMS(3)

3. The lower molecular weight subunit of the human **\*\*transferrin\*\*** **\*\*receptor\*\*** of a strain of N. meningitidis, in substantially purified form and in the absence of the higher molecular weight subunit of receptor, the said subunit having a molecular weight of 65 to 74 kD approximately.

#### CLMS(4)

4. The lower molecular weight subunit of the human **\*\*transferrin\*\*** **\*\*receptor\*\*** of a strain of N. meningitidis strain 2394, in substantially purified form and in the absence of the higher molecular weight subunit of said receptor.

#### CLMS(5)

5. The lower molecular weight subunit of the human **\*\*transferrin\*\*** **\*\*receptor\*\*** of a strain of N. meningitidis, in substantially purified form and in the absence of the higher molecular weight subunit of said receptor; the said subunit having a molecular weight of 75 to 90 kD approximately.

#### CLMS(6)

6. The lower molecular weight subunit of the human **\*\*transferrin\*\*** **\*\*receptor\*\*** of an N. meningitidis strain 2169, in substantially purified form and in the absence of the higher molecular weight subunit of said receptor.

#### CLMS(7)

7. A vaccinal pharmaceutical composition which comprises, as therapeutic agent, the lower molecular weight subunit of the human **\*\*transferrin\*\*** **\*\*receptor\*\*** of at least one strain of N. meningitidis; in the absence of the high molecular weight subunit of the said receptor.

#### CLMS(8)

8. A pharmaceutical composition according to claim 7, which comprises the lower molecular weight subunit of the human **\*\*transferrin\*\*** **\*\*receptor\*\*** of at least one strain of N. meningitidis serogroup B.

#### CLMS(9)

9. A pharmaceutical composition according to claim 7, which comprises, as therapeutic agent, the lower molecular weight subunit of the human **\*\*transferrin\*\*** **\*\*receptor\*\*** of a strain of N. meningitidis; the said subunit having a molecular weight of 65 to 74 kD approximately.

#### CLMS(10)

10. A pharmaceutical composition according to claim 9, which comprises, as therapeutic agent, the lower molecular weight subunit of the human **\*\*transferrin\*\*** **\*\*receptor\*\*** of N. meningitidis 2394.

#### CLMS(11)

11. A pharmaceutical composition according to claim 7, which comprises, as therapeutic agent, the lower molecular weight subunit of the human **\*\*transferrin\*\*** **\*\*receptor\*\*** of a strain of N. meningitidis; the said subunit having a molecular weight of 75 to 90 kD approximately.

#### CLMS(12)

12. A pharmaceutical composition according to claim 11, which comprises, as therapeutic agent, the lower molecular weight subunit of the human **\*\*transferrin\*\*** **\*\*receptor\*\*** of N. meningitidis 2169.

#### CLMS(13)

13. A pharmaceutical composition according to claim 7, which comprises,

as therapeutic agent:

i) a first lower molecular weight subunit of the human

**\*\*transferrin\*\***

**\*\*receptor\*\*** of a first strain of *N. meningitidis*; the said first subunit having a molecular weight of 65 to 74 kD approximately; and

ii) a second lower molecular weight subunit of the human

**\*\*transferrin\*\***

**\*\*receptor\*\*** of a second strain of *N. meningitidis*; the said second subunit having a molecular weight of 75 to 90 kD approximately; in the absence of the high molecular weight subunit of the said receptor

of the said first and second strains of *N. meningitidis*.

#### CLMS(14)

14. A pharmaceutical composition according to claim 13, which comprises,

as therapeutic agent:

i) the lower molecular weight subunit of the human **\*\*transferrin\*\***

**\*\*receptor\*\*** of *N. meningitidis* 2394; and

ii) the lower molecular weight subunit of the human **\*\*transferrin\*\***

**\*\*receptor\*\*** of *N. meningitidis* 2169;

in the absence of the high molecular weight subunit of the said receptor

of *N. meningitidis* strains 2394 and 2169.

#### CLMS(15)

15. A vaccinal pharmaceutical composition which comprises, as a therapeutic agent, the lower molecular weight subunit of the human **\*\*transferrin\*\*** **\*\*receptor\*\*** of a strain of *N. meningitidis*, in the absence of the high molecular weight subunit of said receptor.

=> e quentin-millet, m/in

E# FILE FREQUENCY TERM

E1	USPAT	1	QUENOUILLE, GEORGES EMILE/IN
E2	USPAT	1	QUENTER, HORST/IN
E3	USPAT	0 -->	QUENTIN MILLET, M/IN
E4	USPAT	1	QUENTIN MILLET, MARIE J/IN
E5	USPAT	2	QUENTIN MILLET, MARIE JOSE/IN
E6	USPAT	3	QUENTIN MILLET, MARIE JOSE B/IN
E7	USPAT	1	QUENTIN, ERIC/IN
E8	USPAT	1	QUENTIN, ERIC P F/IN
E9	USPAT	1	QUENTIN, GEORGE H/IN
E10	USPAT	1	QUENTIN, GERAD/IN
E11	USPAT	3	QUENTIN, GERARD/IN
E12	USPAT	1	QUENTIN, GERARD J/IN

=> s e4-6

1 "QUENTIN MILLET, MARIE J"/IN

2 "QUENTIN MILLET, MARIE JOSE"/IN

3 "QUENTIN MILLET, MARIE JOSE B"/IN

L3 6 ("QUENTIN MILLET, MARIE J"/IN OR "QUENTIN MILLET, MARIE JOSE B"/IN)

E"/

IN OR "QUENTIN MILLET, MARIE JOSE B"/IN)

=> d 1-6

1. 5,618,541, Apr. 8, 1997, Vaccine against *Neisseria meningitidis* infections; **\*\*Marie-Jose Quentin-Millet\*\***, 424/250.1, 249.1; 435/871

:IMAGE AVAILABLE:

2. 5,618,540, Apr. 8, 1997, Subunit vaccine against *Neisseria meningitidis* infections and corresponding subunits in the purified state;

**\*\*Marie J. Quentin-Millet\*\***, et al., 424/250.1, 249.1; 435/871

:IMAGE

AVAILABLE:

3. 5,045,203, Sep. 3, 1991, Separation of protein antigens of *Bordetella* bacteria by affinity chromatography; **\*\*Marie-Jose Quentin-Millet\*\***, et

al., 210/635, 198.2, 502.1, 656; 502/403; 530/413, 417, 825

:IMAGE

AVAILABLE:

4. 4,985,144, Jan. 15, 1991, Affinity chromatography material for antigens of the bacteria of the *Bordetella* genus; **\*\*Marie-Jose B. Quentin-Millet\*\***, et al., 210/198.2, 502.1, 635, 656; 502/403; 530/413,

417 :IMAGE AVAILABLE:

5. 4,965,205, Oct. 23, 1990, Culture medium for bacteria of the *Bordetella* genus containing etherified derivative of D-glucose and a cyclodextrin; **\*\*Marie-Jose B. Quentin-Millet\*\***, et al., 435/252, 244, 248, 252.1, 253.6, 822 :IMAGE AVAILABLE:

6. 4,774,086, Sep. 27, 1988, Process for the purification, solubilization and/or detoxification of protein antigens of bacteria of the *Bordetella* genus using a carbonate buffer and an acellular anti-whooping cough vaccine; **\*\*Marie-Jose B. Quentin-Millet\*\***, et al., 424/240.1, 254.1, 278.1; 435/243, 244, 822; 530/417 :IMAGE AVAILABLE: